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Cooperation, competition, or unique roles? The Arthur Lakes library and the Computing Center at the Colorado School of Mines

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COOPERATION, COMPETITION, OR UNIQUE ROLES?
THE ARTHUR LAKES LIBRARY AND THE COMPUTING CENTER AT
THE COLORADO SCHOOL OF MINES

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There has been much discussion in recent years about the collision course on which libraries and computing organizations often find themselves, sometimes racing to deliver information or technology to outdo the other. At worst, this conflict can create havoc and leave institutional interests in the distance. At times, it can be a spirited game of bumper cars where direction is lost and organization is non-existent. While the Library and the Computing Center at the Colorado School of Mines (CSM) sometimes bump into each other, we believe it is our responsibility as directors of those organizations to develop an academic information infrastructure that supports the needs of the CSM community within the fiscal realities that face us.

The atmosphere at CSM continues to embody the frontier spirit evident in its history. In 1874, the Territorial Legislature appropriated \$5,000 to found the Territorial School of Mines, proposed nine years earlier by the Right Reverend George M. Randall, Missionary Bishop of the Episcopal Church, to assist the mining industry of Colorado Territory. When Colorado achieved statehood in 1876, the school became the Colorado School of Mines. Located in Golden, adjacent to the foothills of the Rocky Mountains, CSM today is a public education and research institution devoted to engineering and applied science relating to natural resources. Programs are demanding and a rugged, "can do" attitude continues to be instilled among today's students. Degrees through the Ph.D. are offered in science and engineering in disciplines ranging from mining to metallurgical engineering to economics and business. It is one of the very few

institutions in the world having broad expertise in resource exploration, extraction, production, and utilization which can be brought to bear on the world's pressing resource-related demands and environmental problems. CSM continues to enjoy an international reputation for the quality of its programs and maintains strong relationships with resource-related industries. Currently, the student body numbers approximately 3000, with one-third being graduate students. The Arthur Lakes Library has 130,000 monographs, 2500 serial subscriptions, 170,000 maps, and 275,000 government publications.

While some of our desire to cooperate may be rooted in preserving the culture and tradition of our institution, much of our ability to build a cooperative information infrastructure begins with a mutual belief that our essential common purpose is to be advocates for the scholarship of faculty and students. This common mission helps us to focus on the ways each organization can best deliver development, support, and other services to its constituents, including each other. Reporting to the Vice President for Academic Affairs and being part of the academic department heads group that meets bi-weekly helps us to further refine that focus and better understand the academic directions and issues that face the institution. Also, a series of joint projects has built an understanding among key staff of the expertise to be found in each area and the unique role that each organization fulfills within the institution. While we'd like to say that such projects were well formulated and planned, the reality is that, at least in the beginning, they began on separate paths and met at appropriate points.

In 1984, CSM joined several universities in forming the Colorado Alliance of Research Libraries (CARL), a consortial effort to link library catalogs, share database licensing and networking arrangements, and facilitate document delivery and library resource sharing. The six founding libraries (University of Colorado - Boulder, University of Denver, University of Northern Colorado, Auraria Higher Education Complex which includes the University of Colorado - Denver and Metropolitan State College, the Colorado School of Mines, and the Denver Public Library) were able to avoid duplication of development efforts and resources by acquiring shared computing

resources and creating a common development and support staff. The CARL alliance quickly grew to eleven members and has evolved and grown dramatically since. Aware of CARL activity, but not involved in it, CSM Computing Center staff believed they could expand CARL access to some degree throughout the CSM campus, having installed a campus-wide network in early 1986. This was done simply by connecting ports from the CARL multiplexors to network-attached terminal servers. The response was instant and access to CARL catalogs and databases from faculty offices and student workrooms began to increase.

Encouraged by this success, access to the campus network and general computing resources was extended throughout the Library. Wiring, terminals, workstation furniture, and PCs were provided for group study rooms and some public areas of the Library. As workstations were added to augment those in general student workrooms, student consultants were assigned to work some hours in the Library to assist computer users. Library reference staff also supplemented their current knowledge of systems and began to field some basic questions. These first steps regarding cooperative relationships for user services were initiated at the Director level of the Library and Computing Center and were encouraged to become standard operating procedure for staff as circumstances dictated.

By 1988, CSM, together with five universities (University of Colorado - Boulder, University of Colorado - Colorado Springs, University of Colorado - Denver, Colorado State University, and the University of Denver) and the Colorado Advanced Technology Institute (CATI), founded Colorado Supernet, a statewide research and education computer network. Colorado Supernet was not unlike CARL in its origins, rooted in a consortium of universities with a common set of needs to address. Supernet's objectives were to develop and deliver internet-working technology for broad-based academic uses, while CARL's mission was to deliver specific types of information using shared technology and human resources. The information focus of CARL, together with the technology focus of Colorado Supernet, were complementary, and created a powerful alliance for some time. Furthermore, the structures and

some overlap in membership of CARL and Colorado Supernet helped to insure that Library access and concerns would be afforded high priority.

Our experiences and involvement with CARL and Colorado Supernet helped us to realize that our campus roles were also complementary and need not grow into conflict or competition as some had predicted. In fact, it helped to confirm the distinct role of each organization and paved the way for more cooperation and future collaborative efforts.

To ensure that campus concerns of the Library and the Computing Center would be formally represented to the other, positions are reserved on each organization's advisory committee for a representative from the other group. Emerging needs and technologies can be seen and studied sooner and matched with program development plans using this framework. As Gopher and World Wide Web technology developed and began to become available, for example, the Library staff brought their expertise in the arrangement and classification of information to bear and worked jointly to develop structure and content for CSM's servers. Library staff are an integral part of the campus World Wide Web development that is being assembled. In the educational area, staff members from each group have served as joint clients to groups of students in the Engineering Practices Introductory Course Sequence (EPICS) charged to recommend Geographic Information System (GIS) technologies and methods for use by Library staff and patrons.

In 1994, the Library received a technology grant from the Helen K. and Arthur E. Johnson Foundation for the improvement of reference and information services to patrons. Funding was provided to build the infrastructure required to enable Library users and staff to locate and efficiently use a wide range of information for scholarship, teaching, and research. Although the Library had significant networking capabilities, more was needed, and as the campus was migrating to a combination of fiber and category 5 twisted pair wiring to be able to support increased bandwidth and diverse applications, the decision was made to re-wire the Library. In addition, a Pentium-based server, new Pentium and 486-based computers, CD-ROM tower,

databases, and new software were acquired to provide improved support for Library staff and patrons. The environment uses off-the-shelf components and software, and provides desktop productivity tools, full access to CARL, campus networks and computer resources, and the Internet through a variety of applications. The Library staff designed the computing environment with technical review and assistance from the Computing Center while the Computing Center staff took the lead in designing the physical network. With some initial training and implementation assistance from the Computing Center, Library staff manage and administer the local area network (LAN) on a day-to-day basis.

The reality is that we are major consumers of each other's expertise. Key staff members have worked with each other on enough projects to feel comfortable and not threatened when asking for assistance from the other organization. This comfort level has extended to involvement with external visiting committees and other committees, councils, or organizations. When areas of overlap or mutual interest are encountered, we usually work jointly with work alliances and leadership emerging as needed. We have grown comfortable with the idea that joint appointments between organizations may be appropriate for specific positions or responsibilities in the future.

Summary

Historically, the departmental missions of the Library and the Computing Center have been quite distinct, dissimilar, and separate. While our role in developing and supporting the information infrastructure has drawn us closer together given the increasing demand for information and the growing capabilities of technology, we continue to fulfill fundamentally different roles within the institution. The Library maintains its expertise in the identification, acquisition, organization, preservation, and provision of information while the Computing Center designs and delivers technology solutions in the form of access, connectivity, processing power, storage, applications, and technology administration. Many institutions have addressed the relationship between

these areas and others by creating a chief information officer position at a strategic level. Although it has been discussed, such an office is unlikely to be created in our institution because of both size and funding issues. Yet the coordination between information (Library, Information Systems) and technology (Computing, telecommunications, video) units will need to increase to best serve the needs of the institution. While an individual could be charged with chief information officer (CIO) responsibilities, it is more likely that an information council, drawn from appropriate areas, will be developed to address such coordination.

We expect the fundamental roles of our organizations to remain unique, but perhaps more interdependent than in the past. The increasing use of technology to catalog and deliver information, and the increasing demand by technology-literate consumers to identify, locate, and retrieve relevant and credible information, make it essential that our organizations work closely to deliver the access and resources needed by the CSM community. We face significant challenges in providing flexible organizations that can respond to ever-changing technological, informational, and political environments. This requires that professional staff not only possess technical and discipline expertise, but a host of other factors that will allow them to operate in a collaborative fashion. Our role as directors will be to provide leadership, but more importantly support, to encourage, foster, and keep vigorous the new relationships that form.

6. competition for resources among the universities has become more fierce¹².

All these considerations point to the fact that a university has to be able to tell people about its work, its results and its needs in various kinds of forum, and has to be capable of opening up and maintaining real-time interaction situations and of creating high quality teaching and learning environments by methods that may include the use of information technology¹³.

In order to acquit itself of this task successfully, a university needs to undertake comprehensive, long-term strategic planning in which efficient data management occupies a prominent position. Since data constitute a significant resource, and data

Abbreviations

CARL	Colorado Alliance of Research Libraries
CATI	Colorado Advanced Technology Institute
CD-ROM	Compact Disk - Read Only Memory
CIO	Chief Information Officer
CSM	Colorado School of Mines
EPICS	Engineering Practices Introductory Course Sequence
GIS	Geographic Information Systems
LAN	Local Area Network
PC	Personal Computers

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